

**REMARKS**

Claims 1-4, 8-13, and 21-24 are pending in this application. Claim 8 is withdrawn from examination as being directed to a non-elected species, but respectfully requested to be reinstated and allowed upon allowance of respective generic claim 1 from which it depends. Claims 1, 10, and 21 are independent. Claims 2-4, and 9 depend on claim 1. Claims 11-13 depend on claim 10. Claims 23 and 24 depend on claim 21. Based on the following remarks, reconsideration and allowance of the application is respectfully requested.

**Claim Rejections – 35 USC §102**

Claims 1-4, 10, 11 and 21 stand rejected under 35 U.S.C. §102(e), as being allegedly anticipated by U.S. Patent No. 6,939,350 (“Phan”). Preliminarily, Applicant does not concede that Phan qualifies as a §102(e) reference, and reserves the right to challenge the claim rejections on that basis.

In order to sustain a rejection under §102, each element in the rejected claim must be found, either expressly or inherently, in the cited reference. Applicant respectfully traverses this rejection, because Phan does not disclose each and every element required by these claims.

Independent apparatus claims 1 and 10 each recites a catheter and a transducer secured to the catheter. Independent claim 1 further recites that the catheter comprises a channel located adjacent the transducer adapted for carrying cooling fluid. Independent claim 10 further recites that the catheter comprises a “means for cooling the catheter distal end”. Independent method claim 21 includes the act of introducing a catheter carrying a transducer into a body.

In contrast, Phan discloses several embodiments of surgical probes with shafts 102 that consist of a central mandrel 110 surrounded by an electrically non-conductive outer structure 112. Col. 5, lines 23-25. While Phan does state that his invention includes “catheter-based probes,” he does not disclose how his electrodes and cooling structures would be integrated into or used with catheters. In fact, Phan specifically distinguishes his shafts 102 from catheters. See Col. 6, lines 19-27 and 43-47.

Thus, regarding claim 1, Phan does not teach or suggest a transducer secured to a catheter or that the catheter comprises a channel located adjacent the transducer adapted for carrying cooling fluid. Regarding claim 10, Phan does not teach or suggest a transducer secured to a catheter that comprises a means for cooling the catheter distal end. Regarding claim 21, Phan does not teach or suggest a step of introducing a catheter carrying a transducer into a body.

For at least these reasons, Applicant respectfully submits that independent claims 1, 10, and 21, along with the remaining claims, which depend there from, are not anticipated by Phan, and respectfully requests withdrawal of the §102 rejection of these claims.

### **Claim Rejections – 35 USC §103**

The Supreme Court set forth the basic test for obviousness in Graham v. John Deere, 383 U.S. 1, 148 (1966)). Additionally, the Supreme Court has addressed the issue of obviousness in KSR International vs. Teleflex Inc., 550 U.S. \_\_\_\_ (2007), in which the Court reiterated the requirement that a rejection on “obviousness grounds cannot be sustained by mere conclusory statements; instead, there must be some articulated reasoning with some rational underpinning to support the legal conclusion of

obviousness” (KSR at page 14 of the slip opinion), and further that a “fact finder should be aware, of course, of the distortion caused by hindsight bias and must be cautious of arguments reliant upon ex parte reasoning. (KSR at page 17 of the slip opinion).

Claims 9, 12, 13, 22, 23, and 24 stand rejected under 35 U.S.C. § 103(a) for allegedly being unpatentable over Phan in view of U.S. Patent No. 6,366,813 (“DiLorenzo”). Preliminarily, Applicant submits that it is improper to combine Phan and DiLorenzo in an attempt to achieve the presently claimed invention, because Phan specifically teaches away from catheters as described above. As such, there can be no “rational underpinning to support the legal conclusion of obviousness,” as required by KSR International vs. Teleflex Inc. Applicant also respectfully traverses this rejection, because the combination of Phan and DiLorenzo, even if proper, does not disclose, teach, or suggest the combinations of elements and acts required by the rejected claims.

Claim 9 incorporates all of the elements and limitations of claim 1 from which it depends. As discussed above, Phan does not disclose a catheter comprising a channel located adjacent the transducer adapted for carrying cooling fluid, and DiLorenzo does not supply this missing limitation. In particular, DiLorenzo discloses a neurological control system for modulating activity of the nervous system or any structure interfaced thereto, but it does not disclose any catheter cooling system.

Claims 12 and 13 incorporate all of the elements and limitations of claim 10 from which they depend. As discussed above, Phan does not disclose a catheter that comprises a means for cooling the catheter distal end. DiLorenzo does not disclose any catheter cooling system.

Claims 9 and 13 require an acoustic energy sensor secured to the catheter. While DiLorenzo discloses head-mounted 11, proximal 27, enclosure-mounted 35, and distal acoustic sensors 19, DiLorenzo does not disclose acoustic energy sensors secured to catheters. Col. 14, lines 39-44.

Claims 23 and 24 require the act of sensing reflected acoustic signals associated with delivered acoustic energy and analyzing the reflected acoustic signals. While DiLorenzo discloses using acoustic sensors to monitor vibratory characteristics, DiLorenzo does disclose sensing reflected acoustic signals associated with delivered acoustic energy and analyzing the reflected acoustic signals. Col. 8, lines 52-55.

The above-discussed failure of Phan to disclose every element required by claim 21 also applies to claim 22, which incorporates all of the elements of independent claim 21 from which it depends. The Examiner's Official Notice regarding the administration of blood thinners in combination with ultrasound treatment therapy, the propriety of which Applicant does not concede, fails to supply this missing limitation. Other than through improper hindsight and ex parte reasoning, Phan, combined with DiLorenzo and the Examiner's Official Notice, still does not disclose, teach, or suggest the combination of acts required by claim 22.

For at least these reasons, Applicant respectfully submits that claims 9, 12, 13, 22, 23, and 24 are not obvious over Phan in view of DiLorenzo, and as such, requests withdrawal of the §103 rejection of these claims.

**Conclusion**

For the reasons set forth above, Applicant respectfully submits that the currently pending claims are patentable over the cited prior art. A notice of allowance is respectfully requested.

If there are any questions regarding this submission that can be resolved by telephone, Applicant invites the Examiner to contact the undersigned at the number below.

Respectfully submitted,

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